

Appl. No. 10/733,690
Amdt. Dated August 26, 2005
Reply to Office Action of June 1, 2005

AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph [0018] with the following amended paragraph:

[0018] ~~Figure 5 shows~~ Figures 5A-5C show a partial view of a constant velocity joint in accordance with an alternative embodiment of the present invention, and details of alternative energy absorption surfaces.

Please replace paragraph [0028] with the following amended paragraph:

[0028] Into the inner joint part 52 there is inserted a connecting shaft 44. A plate cap 46 is secured to the outer joint part 50. A convoluted boot 47 seals the plate cap 46 relative to the connecting shaft 44. The other end of the joint 11 at the cylindrical open end 66, i.e., towards the hollow shaft 42, is sealed by a grease cover 48. In addition, the cover 48 may provide some energy absorption should the connecting shaft 44 be thrust beyond the extended axial range E of constant velocity joint 11. That is, the grease cover 48 is displaceable when the joint travels beyond the extended axial range. The constant velocity joint 11 is designed to operate in its normal axial range N until, however, compression from a crash or an unintended thrust is applied forcing the inner joint part 52, the ball cage 54, and the torque transmitting balls 56 into or through the extended axial range E.

Please replace paragraph [0033] with the following amended paragraph:

[0033] Figure 5A shows a partial view of a constant velocity joint in accordance with alternative embodiment of the present invention. In this embodiment, there is a tuned energy absorption surface 86, which is a track surface 88. The track surface 88 having a taper 90 and is longitudinally located in the extended axial range E of an outer ball track 60 of the outer joint part 50. There can be one or more track surfaces 88 located on anyone of the other outer ball tracks 60. The taper 90 may extend linearly over the extended axial range E as shown in the layout view of Figure 6. Alternatively, ~~not shown as shown in the detail of Figures 5B and 5C,~~ the track surface may have a variable taper 91 or a step taper 92 of increasing or decreasing size. As can also be seen in Figures 5A, 5B and 5C, the track feature 88 may be made from the same material piece as the outer joint part 50. Thus, when the connecting shaft 44 along with the inner joint part 52, the torque transmitting balls 56, and the ball cage 54 are thrust, as a result of an unintended force, such as a crash, beyond the normal axial range N and into the extended axial range E of the joint 11, the torque transmitting balls 56 will interfere with or be impeded by the track surface 88. The impediment of the track

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surface 88 causes an increase in the thrust required for axial motion allowing energy to be absorbed by the constant velocity joint 11 and the propeller shaft 26. The track surface 88 can be tuned to achieve different force levels, allowing for the design of a controlled energy absorption profile within the constant velocity joint 11. The tuning may be accomplished by changing the size, the shape, the material, or the location of the track surface 88. The circlip 76 is combined with the track surface 88 as shown in Figure 5, but is not required.

Please add the following new paragraph after paragraph [0033]:

[0033.1] Figure 5A also shows the "double offset" nature of the joint 11, wherein the center O_o of the outer spherical surface of the cage 54 and the center O_i of the inner spherical surface of the cage 54 are offset from each other by an equal amount in opposite directions of the center O of the cage windows.